

## INTERNATIONAL SEARCH REPORT

International application No.

PC P03/07503

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> C21D8/10, C22C38/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> C21D8/00-8/10, 9/08, C22C38/00-38/60

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2002-129283 A (Sumitomo Metal Industries, Ltd.), 09 May, 2002 (09.05.02), Claims; column 1, lines 19 to 22; column 5, lines 42 to 49; column 8, 25 to 32; table 1; kind of steel H (Family: none)	1-16
X	JP 64-25916 A (NIPPON STEEL CORP.), 27 January, 1989 (27.01.89), Claims; page 1, lower right column, lines 3 to 8; page 3, upper left column, line 15 to upper right column, line 1 (Family: none)	1-16

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
15 July, 2003 (15.07.03)

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PO P03/07503

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 61-279623 A (NIPPON STEEL CORP.), 10 December, 1986 (10.12.86), Claims (Family: none)	1-16
A	GB 2155950 A (NIPPON STEEL CORP.), 02 October, 1985 (02.10.85), Claims & DE 3507124 A & FR 2560608 A & JP 60-187663 A Claims & CA 1239568 A	1-16

## &lt;The subject of search&gt;

Claims 1 and 2, and, claims 3 and 4 include all the oil well steel pipes having desired properties of "the ratio a/b of the crushing pressure after pipe expansion to the crushing pressure before pipe expansion is the range of 0.85 to less than 1" and "the ratio c/d of the crushing pressure after pipe expansion and aging to the crushing pressure before pipe expansion is the range of 1 to 1.2", respectively. However, only an oil well steel pipe is disclosed in the meaning of PCT Article 5, which is produced by a method comprising subjecting a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a hot rolling, and winding up the resulting steel belt at a temperature of 300°C or lower, or comprising heating a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a temperature from  $A_{c3}$  [°C] to 1150°C, and then cooling the resultant steel piece at a rate of 5 to 50°C/sec for the range of 400 to 800°C. Therefore, claims 1 and 2, and, claims 3 and 4 lack the support in the meaning of PCT Article 6.

Accordingly, the search for claims 1 to 4 and claims 5 to 10 defined by referring to claims 1 to 4 has been carried out for the range supported by and disclosed in the specification, that is, for an oil well steel pipe produced by a method comprising subjecting a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a hot rolling, and winding up the resulting steel belt at a temperature of 300°C or lower, and an oil well steel pipe produced by a method comprising heating a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a temperature from  $A_{c3}$  [°C] to 1150°C, and then cooling the resultant steel piece at a rate of 5 to 50°C/sec for the range of 400 to 800°C.